

1713/image



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                               |   |                         |
|-------------------------------|---|-------------------------|
| International Application of: | ) | Art Unit: 1713          |
| GOULIAEV, et al.              | ) | Examiner:               |
| Serial No.: 10/507,936 ✓      | ) | Washington, D.C.        |
| Filed: April 20, 2005         | ) | July 13, 2005           |
| For: A BUILDING BLOCK CAPABLE | ) | Docket No.: GOULIAEV=13 |
| OF FUNCTIONAL ENTITY          | ) | Confirmation No.: 3083  |
| TRANSFER TO NUCLEOPHIL        | ) |                         |

INFORMATION DISCLOSURE STATEMENT [IDS]

U.S. Patent and Trademark Office  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

S i r :

This Information Disclosure Statement is submitted in accordance with 37 C.F.R. 1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

1. This IDS should be considered, in accordance with 37 C.F.R. 1.97, as it is filed:

☒ A. within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application. See 37 CFR 1.97(b)(1) and (3).

☐ B. before the mailing date of a first office action on the merits. See 37 CFR 1.97(b).

☐ C. after (A) and (B) above, but before final rejection or allowance, and Applicants have made the necessary certification (box "i" below) or paid the necessary fee (box "ii" below). See 37 CFR 1.97(c)(2).

☐ i. Counsel certifies that, upon information and

belief, each item of information listed herein was either (a) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS or (b) was not cited in a communication from a foreign patent office in a counterpart foreign application and was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

- [ ] ii. Credit Card Payment Form, PTO-2038, authorizing payment for the fee set forth in 1.17(p), presently believed to be \$180, is attached.

[ ] D. after (A), (B) and (C) above, but before payment of the issue fee. Applicant petitions under 37 C.F.R. 1.97(d) for consideration of this IDS. A Credit Card Payment Form, PTO-2038, authorizing payment for the fee set forth in 1.17(p)(1), presently believed to be \$180 is attached. Counsel certifies that, upon information and belief, each item of information listed herein was either (i) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS or (ii) was not cited in a communication from a foreign patent office in a counterpart foreign application and was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

[ ] E. As a submission in accordance with the transitional procedure for limited examination after final rejection pursuant to 37 CFR §1.129(a). Pursuant to MPEP §706.07(g), page 700-66, col. 2 (August 2001), this IDS is treated as if filed with a period set forth in 37 CFR §1.97(b) and considered without the petition and petition fee required by 1.97(d).

[ ] F. As a submission with or after a request for continued examination under CFR §1.114, and before the mailing of a first office action on the RCE. See 37 CFR §1.97(b)(4).

2. In accordance with 37 C.F.R. 1.98, this IDS includes a

list (e.g., form PTO-1449) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. A copy of each document is attached, except as explained below.

[ ] While an IDS filed under §1.97 must contain a "list of all patents, publications or other information submitted for consideration by the Office", see §1.98(a) (1), the only requirement for the list is that it provide the information set forth in §1.98(b). There is no requirement that a form PTO-1449 be used (MPEP §609 merely says that use of this form is "encouraged"). Counsel has used a list provided to him by Applicants, and not transferred the information to a PTO-1449, to avoid the risk of any inadvertent error in transferring the information.

[X] A. Documents FC-GE are U.S. Patents or U.S. Patent Publications, and hence copies of these documents have not been provided. See 37 CFR 1.98(a)(2)(ii).

[ ] B. Documents \_\_\_\_\_ are deemed substantially cumulative to documents \_\_\_\_\_, and, in accordance with 1.98(c), only a copy of each of the latter documents is enclosed.

[X] C. Documents 1-53, AA-AM, BA-DO, DP-FB, and KM-LL were previously cited by or submitted to the Office in the following prior application(s), which are relied upon under 35 U.S.C. 120:

USSN 10/175,539, filed June 20, 2002.

Applicants identify these documents by attaching hereto copies of the form PTO-892s and PTO-1449s from the files of the prior applications or a fresh PTO-1449 listing these documents, and request that they be considered and made of record in accordance with 1.98(d). Per 37 CFR 1.98(d), copies of these documents need not be filed in this application. If copies of any of these documents cannot be found in the files of the prior applications, the Examiner is requested to so notify counsel before taking action in this case, so replacement copies can be submitted.

While an IDS filed under §1.97 must contain a "list of all patents, publications or other information submitted for consideration by the Office", see §1.98(a) (1), the only requirement for the list is that it provide the information set forth in §1.98(b). There is no requirement that a form PTO-1449 be used (MPEP §609 merely says that use of this form is "encouraged") and no prohibition on submitting a copy of a form PTO-1449 or form PTO-892 from a prior case. Indeed, the re-use of such forms is desirable as it avoids error in transferring the information, and evidences that the reference was considered in a prior application. A previously accepted PTO-1449, or an examiner-prepared PTO-892, necessarily complies with §1.98(b).

☐ 3. Documents \_\_\_\_\_ are not in the English language. In accordance with 1.98(a)(3), Applicants state:

☐ documents \_\_\_\_\_ already contain an English language abstract, summary or claim set.

☐ a publicly available abstract is attached to each of documents \_\_\_\_, and the source of each abstract is indicated thereon.

☐ documents \_\_\_\_ are patents or published patent applications for which counterpart English language patents or patent applications exist, and are enclosed, as follows:

| <u>Foreign Lang. Doc.#</u> | <u>English Lang. Doc.#</u> |
|----------------------------|----------------------------|
| [insert]                   | [insert]                   |

☐ applicants have prepared an English translation of at least the pertinent portions of documents \_\_\_\_\_, and copies are attached.

☐ A concise explanation of the relevance of documents \_\_\_\_\_ is found in the attached search report from the \_\_\_\_\_ Patent Office (see reply to Comment 68 in the preamble to the final rules; 1135 OG 13 at 20).

☐ A concise explanation of the relevance of documents \_\_\_\_\_ appears in the present specification.

☐ A concise explanation of the relevance of documents \_\_\_\_\_

\_\_\_\_\_ is set forth as follows:

[Insert concise explanation of relevance]

4. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

5. If the month of publication of a nonpatent reference is not stated, it is because it is not apparent from review of the reference. If requested to do so by the Examiner, Applicants will attempt to locate and write to the publisher.

If the publication date of a cited document is set forth only as a publication year, and that year is prior to the year of filing or, if priority is claimed, year of priority of this application, then the particular month of publication is not in issue. Likewise if that publication year is after the year of filing of this application, the month of publication is not in issue.

If the date of publication of a nonpatent reference is stated, then, except as explained below, it is the nominal date stated in the reference, or in a larger document (journal or book) from which the reference was extracted. Applicants reserve the right to challenge this date by contacting the publisher to determine the actual shipment date, or by contacting recipients to determine the receipt dates.

6. Other information being provided for the examiner's consideration follows:

[insert other information]

7. In accordance with 37 C.F.R. 1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in §1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant reserves the right to prove that the date of publication is in fact different.

USSN - 10/507,936

8. The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this paper or credit any overpayment to Deposit Account No. 02-4035.

Respectfully submitted,

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Attorneys for Applicant

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SHEET 1 OF 2

FORM PTO-1449  
U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY DOCKET NO: GOULIAEV=13

SERIAL NO:  
10/507,936

INFORMATION DISCLOSURE STATEMENT  
LIST OF DOCUMENTS CITED BY APPLICANT  
(Use several sheets if necessary)

APPLICANT: GOULIAEV, et al.

FILING DATE: April 20, 2005

GROUP: 1713

U.S. PATENT DOCUMENTS (include at least patentee, patent number and issue date)

| EXAMINER<br>INITIAL | DOCUMENT NUMBER   | DATE      | PATENTEE   | FILING<br>DATE<br>IF APPROP. |
|---------------------|-------------------|-----------|------------|------------------------------|
| KM                  | 6 2 9 7 0 5 3     | 02OCT2001 | Stemmer    |                              |
| KN                  | 20 05 00 25 7 6 6 | 02FEB2005 | Liu et al. |                              |
| KO                  | 20 05 00 42 6 6 9 | 24FEB2005 | Liu et al. |                              |

FOREIGN PATENT DOCUMENTS (include at least document number, publication date and country)

| DOCUMENT NUMBER     | DATE       | COUNTRY | TRANSLATION<br>YES/NO |
|---------------------|------------|---------|-----------------------|
| KP 9 6 0 9 3 1 6    | 28MAR1996  | PCT     |                       |
| KQ 0 0 2 1 9 0 9    | 20APR2000  | PCT     |                       |
| KR 02 1 0 2 8 2 0   | 27Dec2002  | PCT     |                       |
| KS 03 0 7 8 6 2 5   | 25Sept2003 | PCT     |                       |
| KT 20 04 01 3 0 7 0 | 12Feb2004  | PCT     |                       |
| KU 20 04 11 0 9 6 4 | 23DEC2004  | PCT     |                       |
| KV 20 04 02 4 9 2 9 | 25Mar2004  | PCT     |                       |
| KW 20 04 05 6 9 9 4 | 08July2004 | PCT     |                       |
| KX 03 0 7 8 4 4 5   | 25Sept2003 | PCT     |                       |
| KY 03 0 7 8 6 2 6   | 25Sept2003 | PCT     |                       |
| KZ 03 0 7 8 0 5 0   | 25Sept2003 | PCT     |                       |
| LA 03 0 7 8 6 2 6   | 25Sept2003 | PCT     |                       |
| LB 20 04 07 4 5 0 1 | 2Sept2004  | PCT     |                       |
| LC 20 04 07 4 4 2 9 | 2Sept2004  | PCT     |                       |
| LD 20 04 08 3 4 2 7 | 30Sept2004 | PCT     |                       |
| LE 20 04 03 9 8 2 5 | 13May2004  | PCT     |                       |
| LF 20 04 00 1 0 4 2 | 31Dec2003  | PCT     |                       |
| LG 20 04 0 0 9 8 14 | 29JAN2004  | PCT     |                       |
| LH 1 5 3 3 3 8 5    | 25May2005  | EP      |                       |
| LI 0 3 0 7 8 4 46   | 25Sept2003 | PCT     |                       |

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EXAMINER: Initial if reference considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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|---|----|--|---------------------------------|
| <b>FORM PTO-1449</b><br><b>U.S. DEPARTMENT OF COMMERCE</b><br><b>PATENT AND TRADEMARK OFFICE</b>  |    | <b>ATTY DOCKET NO:</b> GOULIAEV=13   | <b>SERIAL NO:</b><br>10/507,936 |
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|   |    | <b>FILING DATE:</b> April 20, 2005   | <b>GROUP:</b> 1713              |
| <b>OTHER DOCUMENTS (include author, title, name of publication, volume, pages and date of publication)</b>  |    |  |                                 |
|   | LJ | Doyon, J.B et al. "Highly sensitive in vitro selections for DNA-linked synthetic small molecules with protein binding affinity and specificity" <u>J. AM. CHEM. SOC</u> , September 16, 2003, pp. 1-2 and S1-S8. |                                 |
|   | LK | Kanan, M.W et al. "Reaction discovery enabled by DNA-templated synthesis and in vitro selection" <u>Nature</u> , Vol. 431, 30 September 2004, pp. 545-549.   |                                 |
|   | LL | "Finding reactions in a haystack: Try'em all, see what works" <u>Meeting American Chemical Society</u> , 10 September 2004, Vol. 305, Science.   |                                 |
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**FILING DATE:** April 20, 2005

**GROUP: 1713**

**U.S. PATENT DOCUMENTS** (include at least patentee, patent number and issue date)

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FOREIGN PATENT DOCUMENTS (include at least document number, publication date and country)

|  |    | DOCUMENT NUMBER |    |    |   |   |   |    | DATE           | COUNTRY | CLASS | SUB-CLASS | TRANSLATION YES/NO |
|--|----|-----------------|----|----|---|---|---|----|----------------|---------|-------|-----------|--------------------|
|  | GF | 9               | 3  | 0  | 3 | 1 | 7 | 2  | 18 Feb 1991    | PCT     |       |           |                    |
|  | GG | 9               | 8  | 3  | 1 | 7 | 0 | 0  | 23 July 1998   | PCT     |       |           |                    |
|  | GH | 0               | 0  | 3  | 2 | 8 | 2 | 3  | 8 June 2000    | PCT     |       |           |                    |
|  | GI | 0               | 0  | 4  | 7 | 7 | 7 | 5  | 17 Aug 2000    | PCT     |       |           |                    |
|  | GJ | 9               | 0  | 0  | 5 | 7 | 8 | 5  | 31 May 1990    | PCT     |       |           |                    |
|  | GK | 0               | 3  | 2  | 4 | 6 | 1 | 6  | 19 July 1989   | EP      |       |           |                    |
|  | GL | 9               | 6  | 3  | 5 | 6 | 9 | 9  | 14 Nov 1996    | PCT     |       |           |                    |
|  | GM | 0               | 6  | 9  | 5 | 3 | 0 | 5  | 27 Oct 1994    | EP      |       |           |                    |
|  | GN | 0               | 0  | 6  | 1 | 7 | 7 | 5  | 19 Octr 2000   | PCT     |       |           |                    |
|  | GO | 0               | 6  | 0  | 4 | 5 | 5 | 2  | 1 April 1993   | EP      |       |           |                    |
|  | GP | 9               | 5  | 1  | 2 | 6 | 0 | 8  | 11 May 1995    | PCT     |       |           |                    |
|  | GQ | 0               | 7  | 7  | 3 | 2 | 2 | 7  | 14 May 1997    | EP      |       |           |                    |
|  | GR | 0               | 7  | 7  | 6 | 3 | 3 | 0  | 4 October 1996 | EP      |       |           |                    |
|  | GS | 0               | 6  | 4  | 3 | 7 | 7 | 8  | 14 Oct. 1993   | EP      |       |           |                    |
|  | GT | 0               | 0  | 2  | 3 | 4 | 5 | 8  | 27 April 2000  | PCT     |       |           |                    |
|  | GU | 0               | 2  | 0  | 7 | 4 | 9 | 29 | 26 Sept 2002   | PCT     |       |           |                    |
|  | GV | 20              | 04 | 01 | 6 | 7 | 6 | 7  | 26 Feb 2004    | PCT     |       |           |                    |
|  | GW | 9               | 8  | 5  | 6 | 9 | 0 | 4  | 17 Dec. 1998   | PCT     |       |           |                    |
|  | GX | 0               | 1  | 0  | 0 | 8 | 7 | 6  | 4 Jan. 2001    | PCT     |       |           |                    |
|  | GY | 9               | 6  | 1  | 2 | 0 | 1 | 4  | 25 April 1996  | PCT     |       |           |                    |
|  | GZ | 02              | 1  | 0  | 3 | 0 | 0 | 8  | 27 Dec 2002    | PCT     |       |           |                    |
|  | HA | 02              | 1  | 0  | 2 | 8 | 2 | 0  | 27 Dec 2002    | PCT     |       |           |                    |
|  | HB | 03              | 0  | 7  | 8 | 6 | 2 | 5  | 25 Sept 2003   | PCT     |       |           |                    |
|  | HC | 20              | 04 | 01 | 3 | 0 | 7 | 0  | 12 Feb 2004    | PCT     |       |           |                    |
|  | HD | 20              | 04 | 11 | 0 | 9 | 6 | 4  | 23 12 2004     | PCT     |       |           |                    |
|  | HE | 20              | 04 | 02 | 4 | 9 | 2 | 9  | 25 Mar 2004    | PCT     |       |           |                    |
|  | HF | 20              | 04 | 05 | 6 | 9 | 9 | 4  | 8 July 2004    | PCT     |       |           |                    |
|  | HG | 03              | 0  | 7  | 8 | 4 | 4 | 5  | 25 Sep. 2003   | PCT     |       |           |                    |
|  | HH | 03              | 0  | 7  | 8 | 6 | 2 | 6  | 25 Sept 2003   | PCT     |       |           |                    |
|  | HI | 03              | 0  | 7  | 8 | 0 | 5 | 0  | 25 Sept 2003   | PCT     |       |           |                    |
|  | HJ | 03              | 0  | 7  | 8 | 4 | 4 | 6  | 25 Sept 2003   | PCT     |       |           |                    |
|  | HK | 20              | 04 | 07 | 4 | 5 | 0 | 1  | 2 Sept 2004    | PCT     |       |           |                    |
|  | HL | 20              | 04 | 07 | 4 | 4 | 2 | 9  | 2 Sept 2004    | PCT     |       |           |                    |
|  | HM | 20              | 04 | 08 | 3 | 4 | 2 | 7  | 30 Sept 2004   | PCT     |       |           |                    |
|  | HN | 20              | 04 | 03 | 9 | 8 | 2 | 5  | 13 May 2004    | PCT     |       |           |                    |
|  | HO | 20              | 04 | 00 | 1 | 0 | 4 | 2  | 31.Dec 2003    | PCT     |       |           |                    |
|  | HP | 20              | 05 | 00 | 3 | 7 | 7 | 8  | 13 Jan 2005    | PCT     |       |           |                    |

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| <b>INFORMATION DISCLOSURE STATEMENT<br/>LIST OF DOCUMENTS CITED BY APPLICANT<br/>(Use several sheets if necessary)</b>  |    | <b>APPLICANT: GOULIAEV, et al.</b>   |                              |
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| <b>OTHER DOCUMENTS (include author, title, name of publication, volume, pages &amp; date of publication)</b>  |    |  |                              |
|   | HQ | Nemoto, N et al. "In vitro virus: bonding of mRNA bearing puromycin at the 3'-terminal end to the C-terminal end of its encoded protein on the ribosome in vitro". FEBS Lett. 1997 Sep 8;414(2):405-8.   |                              |
|   | HR | Roberts, RW et al. "RNA-peptide fusions for the in vitro selection of peptides and proteins". Proc Natl Acad Sci U S A. 1997 Nov 11;94(23):12297-302.  |                              |
|   | HS | Kurz, M et al. "An efficient synthetic strategy for the preparation of nucleic acid-encoded peptide and protein libraries for in vitro evolution protocols" Fourth International Electronic Conference on Synthetic Organic Chemistry (ECSOC-4), <a href="http://www.mdpi.org/ecsoc-4.htm">www.mdpi.org/ecsoc-4.htm</a> , September 1-30, 2000 |                              |
|   | HT | Kurz, M et al. "Psoralen photo-crosslinked mRNA-puromycin conjugates: a novel template for the rapid and facile preparation of mRNA-protein fusions. Nucleic Acids Res. 2000 Sep 15;28(18):E83.  |                              |
|   | HU | Keiler et al. "Role of a peptide tagging system in degradation of proteins synthesized from damaged messenger RNA". Science. 1996 Feb 16;271(5251):990-3.  |                              |
|   | HV | Benner, SA. "Expanding the genetic lexicon: incorporating non-standard amino acids into proteins by ribosome-based synthesis". Trends Biotechnol. 1994 May;12(5):158-63  |                              |
|   | HW | Mendel, D." Site-directed mutagenesis with an expanded genetic code". Annu. Rev. Biophys. Biomol. Struc. 1995. 24:463-93   |                              |
|   | HX | Liu DR et al. "Engineering a tRNA and aminoacyl-tRNA synthetase for the site-specific incorporation of unnatural amino acids into proteins in vivo". Proc Natl Acad Sci U S A. 1997 Sep 16;94(19):10092-7.   |                              |
|   | HY | Liu DR et al. "Progress toward the evolution of an organism with an expanded genetic code". Proc Natl Acad Sci USA. 1999 Apr 27;96(9):4780-5   |                              |
|   | HZ | Liu, R et al. "Optimized synthesis of RNA-protein fusions for in vitro protein selection". Methods Enzymol. 2000;318:268-93.   |                              |
|   | IA | Wang, L et al. "A new functional suppressor tRNA/aminoacyl-tRNA synthetase pair for the in vivo incorporation of unnatural amino acids into proteins" J. Am. Chem. Soc. 2000, 122, 5010-5011 Pub 5 April 2000  |                              |
|   | IB | Ellman J.A., et al. " Biosynthetic method for introducing Unnatural Amino acids site specifically into proteins". Methods Enzymol. 202, 301-336 (1992)   |                              |
|   | IC | José Salas et al. "Biosynthetic Polydeoxynucleotides as Direct Templates for Polypeptide Synthesis". J. of Biological Chemistry, vol.243, No. 6, 1968, p. 1012-1015  |                              |
|   | ID | Walder JA, Walder RY, Heller MJ, Freier SM, Letsinger RL, Klotz IM. "Complementary carrier peptide synthesis: general strategy and implications for prebiotic origin of peptide synthesis". Proc Natl Acad Sci U S A. 1979 Jan;76(1):51-5.   |                              |
|   | IE | Bruick et al. "Template-directed ligation of peptides to oligonucleotides" Chemistry and Biology, vol. 3, No. 1, January 1996, p.49-56;  |                              |
|   | IF | Tamura K, Schimmel P. "Oligonucleotide-directed peptide synthesis in a ribosome- and ribozyme-free system". Proc Natl Acad Sci U S A. 2001 Feb 13;98(4):1393-7.  |                              |
|   | IG | Lewis RJ, Hanawalt PC. "Ligation of oligonucleotides by pyrimidine dimers--a missing 'link' in the origin of life?"22;298(5872):393-6.   |                              |
|   | IH | Liu J, Taylor JS. "Template-directed photoligation of oligodeoxyribonucleotides via 4-thiothymidine". Nucleic Acids Res. 1998 Jul 1;26(13):3300-4  |                              |
|   | II | Fujimoto et al. "Template-directed photoreversible ligation of deoxyoligonucleotides via 5-Vinyldeoxyuridine" J. Am. Soc. 2000, 122, 5646-5647   |                              |
|   | IJ | Kenzo Fujimoto, Shigeo Matsuda, Naoki Ogawa, Masayuki Hayashi & Isao Saito<br>"Template-directed reversible photocircularization of DNA via 5-vinyldeoxycytidine".<br>TETRAHEDRON LETTERS 2000 , 41:33:6451-6454   |                              |
|   | IK | Kenzo Fujimoto, Naoki Ogawa, Masayuki Hayashi, Shigeo Matsuda & Isao Saito<br>"Template directed photochemical synthesis of branched oligodeoxynucleotides via 5-carboxyvinyldeoxyuridine". Tetrahedron letters 2000, 41:49:9437-40  |                              |
| <b>EXAMINER</b>   |    | <b>DATE CONSIDERED</b>   |                              |
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|  |    | <b>APPLICANT:</b> GOULIAEV, et al.   |                              |
|  |    | <b>FILING DATE:</b> April 20, 2005   | <b>GROUP:</b> 1713           |
| <b>OTHER DOCUMENTS (include author, title, name of publication, volume, pages and date of publication)</b>   |    |  |                              |
|  | IL | Letsinger et al. "Chemical Ligation of oligonucleotides in the presence and absence of a template". J. Amer. Chem. Soc. 1993, 115, 3808-9  |                              |
|  | IM | Gryaznov SM, Letsinger RL. "Template controlled coupling and recombination of oligonucleotide blocks containing thiophosphoryl groups". Nucleic Acids Res. 1993 Mar 25;21(6):1403-8  |                              |
|  | IN | Gryaznov SM, Schultz R, Chaturvedi SK, Letsinger RL. "Enhancement of selectivity in recognition of nucleic acids via chemical autoligation". Nucleic Acids Res. 1994 Jun 25;22(12):2366-9.                                   |                              |
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| EV   | Website of Prof. David R. Liu, publicly available 15 Oct 2000  |                             |                       |
| EW   | Website of Prof. David R. Liu, publicly available 1 March 2001   |                             |                       |
| EX   | Website of Prof. David R. Liu, publicly available 19 April 2001  |                             |                       |
| EY   | Website of Prof. David R. Liu, publicly available 23 Sept 2001   |                             |                       |
| EZ   | Website of Prof. David R. Liu, publicly available 24 Sept. 2002  |                             |                       |
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|                     | BB | 6               | 2  | 0  | 7  | 4 | 4 | 6 | Mar 27, 2001     | Szostak, J et al.         |       |               |                           |
|                     | BC | 6               | 1  | 4  | 3  | 5 | 0 | 3 | Nov 7, 2000      | Baskerville, DS<br>et al. |       |               |                           |
|                     | BD | 6               | 6  | 2  | 0  | 5 | 8 | 7 | Sept 16,<br>2002 | Taussig, MJ et<br>al.     |       |               | May 28, 1998              |
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|                     | BF | 5               | 5  | 0  | 3  | 8 | 0 | 5 | Apr 2, 1993      | Sugarman et al.           |       |               |                           |
|                     | BG | 5               | 6  | 3  | 9  | 6 | 0 | 3 | Jun 17, 1997     | Dower et al.              |       |               |                           |
|                     | BH | 5               | 6  | 6  | 5  | 9 | 7 | 5 | Sep 9, 1997      | Kedar et al.              |       |               |                           |
|                     | BI | 5               | 7  | 0  | 8  | 1 | 5 | 3 | Jan 13, 1998     | Dower et al.              |       |               |                           |
|                     | BJ | 5               | 7  | 7  | 0  | 3 | 5 | 8 | Jun 23, 1998     | Dower et al.              |       |               |                           |
|                     | BK | 5               | 7  | 8  | 9  | 1 | 6 | 2 | Aug 4, 1998      | Dower et al.              |       |               |                           |
|                     | BL | 6               | 0  | 5  | 6  | 9 | 2 | 6 | May 2, 2000      | Sugarman et al.           |       |               | July 23, 1996             |
|                     | BM | 6               | 1  | 4  | 0  | 4 | 9 | 3 | Oct 31, 2000     | Dower et al.              |       |               | Sept 11, 1998             |
|                     | BN | 6               | 1  | 4  | 3  | 4 | 9 | 7 | Nov 2, 2000      | Dower et al.              |       |               | Mar 6, 1998               |
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|  | BT | 0               | 0  | 3  | 2 | 8 | 2 | 3 | 8 June 2000   | PCT     |       |               |                       |
|  | BU | 0               | 0  | 4  | 7 | 7 | 7 | 5 | 17 Aug 2000   | PCT     |       |               |                       |
|  | BV | 9               | 0  | 0  | 5 | 7 | 8 | 5 | 31 May 1990   | PCT     |       |               |                       |
|  | BW | 0               | 6  | 0  | 4 | 5 | 5 | 2 | 6 July 1994   | EP      |       |               |                       |
|  | BX | 9               | 5  | 1  | 2 | 6 | 0 | 8 | 11 May 1995   | PCT     |       |               |                       |
|  | BY | 0               | 7  | 7  | 3 | 2 | 2 | 7 | 14 May 1997   | EP      |       |               |                       |
|  | BZ | 0               | 7  | 7  | 6 | 3 | 3 | 0 | 4 June 1997   | EP      |       |               |                       |
|  | CA | 0               | 0  | 2  | 3 | 4 | 5 | 8 | 27 April 2000 | PCT     |       |               |                       |
|  | CB | 20              | 04 | 01 | 6 | 7 | 6 | 7 | 26 Feb 2004   | PCT     |       |               |                       |
|  | CC | 9               | 6  | 1  | 2 | 0 | 1 | 4 | 25 April 1996 | PCT     |       |               |                       |
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| FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE   |    | ATTY DOCKET NO: GOULIAEV=13  | SERIAL NO: 10/507,936 |
| INFORMATION DISCLOSURE STATEMENT<br>LIST OF DOCUMENTS CITED BY APPLICANT<br>(Use several sheets if necessary)  |    | APPLICANT: GOULIAEV, et al.  |                       |
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| <b>Application Number</b>     | 10/507,936       |
| <b>Filing Date</b>            | April 20, 2005   |
| <b>First Named Inventor</b>   | GOULIAEV, et al. |
| <b>Group Art Unit</b>         | 1713             |
| <b>Examiner Name</b>          |                  |
| <b>Attorney Docket Number</b> | GOULIAEV=13      |

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Application Number

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**First Named Inventor**

GOULIAEV, et al.

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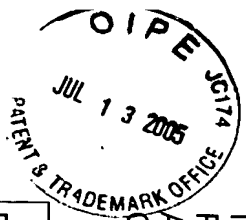
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